ESO 2359

OHIO FARM MACHINERY ECONOMIC COST ESTIMATES FOR 1997

Revised and Adapted for Ohio*

by
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May 1997

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The tables in this publication estimate farm machinery operations or function costs for 1997. The estimates use an economic engineering approach. The data represents an average farming industry cost for specified machines and operations.

Machine costs are separated into time and use-related categories. Overhead costs accrue to the owner whether or not a machine is used. Overhead includes time-related economic costs: depreciation, interest, insurance and housing. There are no personal property taxes in Ohio. Operating costs occur only when a machine is used. They include fuel, lubrication, use-related repairs, and labor charges as an economic cost.

OVERHEAD COSTS: Time-related costs are prorated over a 12-year economic life. Salvage values are estimated based on procedures suggested in a February 1995 *American Journal of Agricultural Economics* article "Depreciation Patterns for Agricultural Machinery," by Timothy Cross and Gregory Perry. Salvage values at 12 years of life now range from 18 to 50 percent. Producers are keeping machinery longer than in the past. Managers, striving for cost control, are sometimes buying a second item, often "twinned" to one now in use.

Purchase prices are discounted from manufacturer's list prices. A 10 percent discount off list price appears "normal." The tables include some adjustment for delivery and setup. An equivalent price adjustment for the income tax expensing option is not included. Interest rate is assumed to be 6 percent. Insurance is 0.85 percent of new cost. A housing charge on average investment of 33 cents per square foot of shelter space needed per year is made.

Formulas used to compute machinery overhead costs:

$$\text{Depreciation, \$ per year} = \frac{\text{Purchase cost - salvage value}}{\text{Years you will use machine}}$$

$$\text{Interest, \$ per year} = \frac{\text{purchase cost + salvage value}}{2} \times \text{"real" interest rate}$$

$$\text{Insurance, \$ per year} = \frac{\text{purchase cost + salvage value}}{2} \times \text{insurance rate}$$

$$\text{Housing, \$ per year} = \text{price per sq. foot} \times \text{sq. feet shelter space required}$$

OPERATING COSTS: Fuel cost is calculated by multiplying the fuel consumption by the price of fuel, with fuel consumption assumed to be 0.053 gallons of diesel fuel per horsepower hour. The price of diesel fuel is projected at 85 cents per gallon. All power units, tractors, combines, trucks, etc., are assumed to use diesel fuel. Lubrication cost is assumed to be 15 percent of fuel cost.

The formulas for repair and maintenance costs estimate total accumulated repair costs according to the accumulated hours of life-time use. Repair and maintenance calculations are based on American Society of Agricultural Engineers (ASAE) formulas. The total cost is then divided to an average per hour cost estimate. The amount of annual use of a machine is an estimate of the number of hours a commercial farmer would use that particular machine in one year.

Labor is charged at an hourly wage rate, which includes 30 percent for benefits. Charge rates are $9.00 per hour for unskilled labor and $11.50 per hour for skilled labor. Labor per acre for an operation such as plowing and disking is calculated by using the work rate on the implement. Less labor per acre is used in a

disking operation that covers more acres per hour than in a plowing operation.

Several reduced and conservation tillage implements were added in 1995. Minimum tillage planters are included. This reflects the current interest in reduced tillage practices.

Average machine function cost-per-acre worked show some changes from previous years. Field speeds have increased in line with current practices. The new ASAE repair functions generally lower repair costs per acre and hour. Use lives are increasing. The assumption made about the number of acres of use has a major influence on the average overhead and the average total machine function cost per acre.

These estimates will not represent any given individual's cost. They can still be used to help plan the cropping operation if more specific data are not available. Differences in buying power, repair programs, average annual use and overall replacement programs should be considered when making adjustments.

Machinery costs are substantial; control of them is important. Custom charges are often based upon them. No one should do custom work unless the charge will cover operating costs plus a return for one's risk and time. Ideally all allocated per acre or hour overhead costs should also be covered by anyone offering to do custom work. The market for custom work usually does not cover all costs. The market is usually somewhere between the operating costs and the total of operating plus allocated per acre or hour overhead costs.

Tables 1-5 provide the 1997 machinery function costs broken down into several categories.

Table 1. Tractors, Combines (Without Heads) & Trucks Economic Cost for 1997

Tractor Combine or Truck Size	Net Cost of the New Power Unit	Annual Hours of Use	— Overhead — Cost per Year	— Overhead — Cost per Hour	— Operating — Expense per[3/] Hour	— Operating — Expense per[3/] Year	— Total Cost — of Use per Year	— Total Cost — of Use per Hour	Maintenance & Repair Cost/Hr.	Diesel Use/Hr. Gallons
40 Hp	18,900	500	1,961	3.92	2.95	1,477	3,438	6.88	0.88	2.1
60 Hp	25,200	500	2,608	5.22	4.28	2,142	4,750	9.50	1.18	3.2
75 Hp	32,400	500	3,347	6.69	5.40	2,699	6,046	12.09	1.51	4.0
105 MFWD	46,800	550	4,898	8.91	6.47	3,558	8,456	15.37	1.03	5.6
130 MFWD	63,000	550	6,580	11.96	8.12	4,467	11,046	20.08	1.39	6.9
160 MFWD	74,400	600	8,149	13.58	10.07	6,044	14,193	23.66	1.78	8.5
200 MFWD	89,500	600	9,793	16.32	12.51	7,506	17,299	28.83	2.15	10.6
225 MFWD	99,000	500	10,798	21.60	13.64	6,818	17,616	35.23	1.98	11.9
260 Hp 4Wd	105,300	500	11,480	22.96	15.58	7,788	19,268	38.54	2.11	13.8
310 Hp 4Wd	109,800	500	11,967	23.93	18.26	9,128	21,095	42.19	2.20	16.4
360 Hp 4Wd	120,600	500	13,136	26.27	21.06	10,531	23,667	47.33	2.41	19.1
Combine Sm	101,700	300	11,671	38.90	28.08	8,424	20,095	66.98	18.50	9.8
Combine Md	117,900	300	13,547	45.16	32.58	9,775	23,323	77.74	21.45	11.4
Combine Lg	132,900	300	15,287	50.96	37.64	11,293	26,580	88.60	24.17	13.8

* See footnotes at end of tables

Table 2. Tillage Equipment Economic Cost Structure for 1997

Machine	Tractor Size (HP)	Net Cost of the New Implement	– Estimated – Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	Total Cost / Acre[2/] Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
Chisel Plow 10 ft	75	4,651	5.82	582	27.95	2.08	1.15	1.58	4.80	1.20	0.68
Chisel Plow 15 ft	130	5,974	8.73	873	37.74	2.30	0.97	1.05	4.32	1.16	0.79
Chisel Plow 19 ft	160	10,310	11.05	1,105	46.92	2.14	1.27	0.83	4.24	1.22	0.77
Chisel Plow 23 ft	200	13,016	13.38	1,338	55.68	2.15	1.32	0.69	4.16	1.26	0.79
Chisel Plow 31 ft	225	16,483	18.04	1,804	66.73	1.95	1.24	0.51	3.70	1.06	0.66
Chisel Plow 37 ft	310	18,801	21.53	2,153	76.92	1.96	1.19	0.43	3.57	1.14	0.76
Chisel Plow 47 ft	360	25,629	27.35	2,735	90.90	1.73	1.26	0.34	3.32	1.08	0,70
Moldboard Plow 4-18	75	9,274	2.78	334	32.89	4.35	4.18	3.30	11.82	3.38	1.43
Moldboard Plow 5-18	105	11,332	3.48	417	38.79	4.42	4.09	2.64	11.16	3.27	1.60
Moldboard Plow 6-18	130	13,552	4.17	542	45.83	4.81	3.97	2.20	10.98	3.44	1.65
Moldboard Plow 8-18	160	18,135	5.56	723	54.94	4.25	3.97	1.65	9.88	3.31	1.52
Moldboard Plow 10-18	260	26,342	6.95	1,043	78.52	5.54	4.43	1.32	11.29	4.19	1.98
Field Cultivator 12 ft	75	4,668	9.02	1,082	27.11	1.34	0.65	1.02	3.01	0.78	0.44
Field Cultivator 18 ft	105	7,082	12.98	1,558	33.23	1.18	0.67	0.71	2.56	0.69	0.43
Field Cultivator 28 ft	160	11,787	20.19	2,423	47.18	1.17	0.71	0.45	2.34	0.70	0.42
Field Cultivator 37 ft	225	16,777	26.68	3,202	64.61	1.32	0.76	0.34	2.42	0.73	0.45
Field Cultivator 47 ft	260	25,155	33.90	4,068	77.66	1.14	0.88	0.27	2.29	0.72	0.41
Field Cultivator 60 ft	310	31,172	43.27	5,193	88.21	0.97	0.85	0.21	2.04	0.67	0.38

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Table 2. Tillage Equipment Economic Cost Structure for 1997 (Continued)

Machine	Tractor Size (HP)	Net Cost of the New Implement	-- Estimated -- Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	——— Total Cost / Acre[2/] ——— Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
Disk Chisel 9 ft	105	6,659	5.41	541	33.95	2.84	1.74	1.70	6.28	1.48	1.03
Disk Chisel 16 ft	200	14,251	10.05	1,005	57.59	2.87	1.95	0.91	5.73	1.57	1.06
Disk Chisel 19 ft	260	20,516	11.59	1,159	75.57	3.32	2.40	0.79	6.52	1.75	1.19
Disk Chisel 21 ft fold	310	21,515	13.14	1,314	80.55	3.21	2.22	0.70	6.13	1.76	1.25
Offset Disk 7 ft	60	4,756	3.25	325	25.23	2.93	2.02	2.83	7.77	1.65	0.98
Offset Disk 12 ft	105	8,591	5.56	556	36.40	2.76	2.13	1.65	6.54	1.51	1.00
Offset Disk 16 ft	130	10,738	7.42	742	44.25	2.71	2.02	1.24	5.96	1.42	0.93
Offset Disk Wing 21 ft	200	19,165	9.74	974	64.07	2.96	2.68	0.94	6.58	1.73	1.09
Offset Disk Wing 23 ft	225	23,082	10.66	1,066	75.65	3.30	2.93	0.86	7.09	1.77	1.12
Tandem Disk 9 ft	40	6,586	5.41	541	25.09	1.27	1.67	1.70	4.64	0.82	0.39
Tandem Disk 11ft	60	5,468	6.40	640	27.02	1.48	1.30	1.43	4.22	0.96	0.50
Tandem Disk 15 ft	105	10,838	8.73	873	40.74	1.76	1.85	1.05	4.67	1.16	0.64
Tdm Disk 21 ft fold	160	16.655	12.22	1,222	57,50	1.94	2.02	0.75	4.71	1.28	0.69
Tdm Disk HD 12 ft	130	8,562	6.98	698	42.09	2.88	1.84	1.31	6.03	1.57	0.99
Tdm Disk HD 18 ft	160	16,560	10.47	1,047	57.43	2.26	2.35	0.88	5.48	1.49	0.81
Tdm Disk HD 30 ft	360	27,759	17.45	1,745	97.11	2.71	2.33	0.53	5.56	1.74	1.09

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Table 2. Tillage Equipment Economic Cost Structure for 1997 (Continued)

Machine	Tractor Size (HP)	Net Cost of the New Implement	– Estimated – Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	Total Cost / Acre[2/] Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
V-Ripper 25" OC 10 ft	160	9,715	6.18	618	45.79	3.83	2.09	1.49	7.41	2.14	1.37
V-Ripper 25" OC 14 ft	200	11,874	8.65	865	53.86	3.33	1.83	1.06	6.22	1.89	1.22
V-Ripper 25" OC 18 ft	260	17,271	11.13	1,113	70.68	3.46	2.06	0.83	6.35	1.90	1.24
V-Ripper 25" OC 25 ft	310	18.350	15.45	1,545	76.09	2.73	1.60	0.59	4.92	1.56	1.06
V-Ripper 30" OC 12.5 ft	160	8,121	7.73	773	43.84	3.06	1.42	1.19	5.67	1.64	1.10
V-Ripper 30" OC 17 ft	200	10,279	10.51	1,051	51.98	2.74	1.33	0.87	4.95	1.51	1.01
Comb Fld Cult Incorp 16 ft	160	18,075	11.54	1,154	59.11	2.05	2.28	0.80	5.12	1.38	0.73
Comb Fld Cult Incorp 23 ft	200	24,391	16.59	1,659	73.60	1.74	2.15	0.55	4.44	1.23	0.64
Comb Fld Cult Incorp 26 ft	260	25,494	18.03	1,803	85.00	2.14	2.07	0.51	4.71	1.32	0.76
Comb Fld Cult Incorp 33 ft	310	30,994	23.80	2,380	96.78	1.77	1.91	0.39	4.07	1.19	0.69
Comb Disk & V-Ripper 12.5	225	17,437	6.44	644	67.95	5.47	3.66	1.43	10.55	2.73	1.85
Comb Disk & V-Ripper 17.5	360	23,396	9.02	902	88.29	5.25	3.53	1.02	9.79	2.93	2.12
Disk Fld Cult Finish 13 ft	130	14,179	9.79	979	49.13	2.05	2.03	0.94	5.02	1.16	0.70
Dsk, Fld Cult Finish 22 ft	200	18,544	9.79	979	63.64	2.95	2.62	0.94	6.50	1.71	1.08
Dsk, Fld Cult Finish 30 ft	260	26,648	15.45	1,545	84.26	2.49	2.36	0.59	5.45	1.40	0.89
Dsk, Fld Cult Finish 38 ft	310	24,447	9.79	979	85.17	4.31	3.45	0.94	8.70	2.43	1.68
Springtooth Drag 30 ft	60	7,453	21.64	649	45.09	0.44	1.20	0.45	2.08	0.27	0.15
Springtooth Drag 48 ft	75	9,406	34.62	1,212	51.29	0.35	0.85	0.28	1.48	0.21	0.11
Springtooth Drag 58 ft	105	11,000	41.33	4,183	39.14	0.37	0.35	0.22	0.94	0.24	0.13
Roller Harrow 12 ft.	75	8,236	7.42	742	32.82	1.63	1.56	1.24	4.42	0.98	0.54
Roller Harrow 28 ft.	160	21,447	17.31	1,731	62.17	1.37	1.69	0.53	3.59	0.86	0.49

* See footnotes at end of tables

Table 3. Planting Equipment Economic Cost Structure for 1997

Machine	Tractor Size (HP)	Net Cost of the New Implement	-- Estimated -- Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	Total Cost / Acre[2/] Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
Row Crop Planter 4-36	40	10,184	5.60	392	38.18	1.23	3.21	2.38	6.82	0.96	0.38
Row Crop Planter 6-30	60	15,040	7.00	490	49.14	1.36	3.76	1.91	7.02	1.12	0.45
Row Crop Planter 8-30	75	20,290	9.33	653	60.77	1.30	3.79	1.43	6.51	1.10	0.43
Row Crop Planter 12-30	105	32,637	14.00	980	85.45	1.10	4.05	0.95	6.10	1.02	0.40
Min-Til Planter 4-36	60	16,817	5.09	356	52.05	1.87	5.74	2.62	10.22	1.63	0.62
Min-Til Planter 6-30	75	23,160	6.36	509	61.47	1.90	5.66	2.10	9.66	1.76	0.62
Min-Til Planter 8-30	105	27,640	8.48	594	76.51	1.81	5.63	1.57	9.02	1.54	0.66
Min-Til Planter 12-30	160	46,599	12.73	1,273	98.11	1.86	4.80	1.05	7.71	1.80	0.67
Min-Til Planter 16-30	200	63,994	12.73	1,655	112.92	2.27	5.56	1.05	8.87	2.52	0.83
Potato Planter Filler		11,542	5.75	322	25.00	0.00	4.35	0.00	4.35	0.53	0.02
Potato Row Marker 4 row	130	10,795	4.98	214	61.28	4.03	5.41	2.86	12.31	1.82	1.38
Potato Row Marker 6 row	160	17,271	7.47	321	81.00	3.17	5.77	1.91	10.84	1.55	1.14
Potato Row Marker 8 row	160	21,588	10.79	464	91.91	2.19	5.00	1.32	8.52	1.10	0.79
Potato Planter 4 row	130	32,384	3.83	214	114.84	5.24	17.32	6.64	29.20	3.96	1.80
Potato Planter 6 row	130	43,177	5.75	322	134.04	3.50	15.41	4.42	23.33	3.05	1.20
Potato Planter 8 row	160	59,418	8.30	465	170.96	2.85	14.68	3.06	20.59	2.77	1.02
Beet Planter 12 row	105	27,345	4.67	280	83.06	3.29	11.45	3.06	17.80	2.70	1.19
Grain Drill 25 ft	130	25,674	10.61	848	72.96	1.89	3.78	1.20	6.88	1.37	0.65
Grain Drill 30 ft	130	31,269	12.73	1,018	81.56	1.58	3.83	1.00	6.41	1.26	0.54
Grain Drill 35 ft	160	34,947	14.85	1,188	90.80	1.59	3.66	0.86	6.12	1.27	0.57

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Table 3. Planting Equipment Economic Cost Structure for 1997 (Continued)

Machine	Tractor Size (HP)	Net Cost of the New Implement	-- Estimated -- Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	Total Cost / Acre[2/] Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
Presswheel Drill 12 ft	75	16,756	5.09	382	52.27	2.38	5.39	2.51	10.27	1.87	0.78
Presswheel Drill 16 ft	105	21,794	6.79	509	63.77	2.26	5.25	1.88	9.39	1.74	0.82
Presswheel Drill 20 ft	130	24,365	8.48	636	72.76	2.37	4.70	1.50	8.58	1.66	0.81
Presswheel Drill 30 ft	160	37,435	12.73	1,018	94.54	1.86	4.57	1.00	7.43	1.53	0.67
Presswheel Drill 40 ft	200	48,515	16.97	1,358	116.79	1.70	4.43	0.75	6.88	1.46	0.62
Air Seeder Drill 36 ft	260	52,926	15.27	1,222	133.18	2.52	5.36	0.84	8.72	1.89	0.90
No-Till Drill 15 ft	130	27,097	6.36	509	74.86	3.16	6.60	2.01	11.76	2.35	1.08
No-Till Drill 20 ft	160	40,136	8.48	679	98.49	2.79	7.32	1.50	11.61	2.38	1.00
No-Till Drill 30 ft	200	52,423	12.73	1,018	122.59	2.27	6.36	1.00	9.63	2.02	0.83

* See footnotes at end of tables

Table 4. Crop Maintenance Equipment Economic Cost Structure for 1997

Machine	Tractor Size (HP)	Net Cost of the New Implement	– Estimated – Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	Total Cost / Acre[2/] Equipment Tractor	+ Machine	Labor +Charge	= Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
Cultivator 4-36	75	3,184	6.18	618	25.54	1.96	0.66	1.51	4.13	0.99	0.64
Cultivator 6-30	60	3,784	7.73	773	23.71	1.23	0.63	1.21	3.07	0.67	0.41
Cultivator 8-30	130	5,395	10.30	1,030	36.35	1.95	0.67	0.91	3.53	0.91	0.67
Cultivator 12-30	160	9,981	15.45	1,545	45.40	1.53	0.80	0.61	2.94	0.80	0.55
Cultivator 16-30	200	13,334	20.61	2,061	54.73	1.40	0.80	0.45	2.66	0.76	0.51
Cultivator Hi Res 4-36	75	5,819	6.18	618	28.77	1.96	1.17	1.53	4.65	1.09	0.64
Cultivator Hi Res 6-30	105	7,942	7.73	773	34.55	1.99	1.27	1.21	4.47	1.08	0.72
Cultivator Hi Res 8-30	160	10,800	10.30	1,030	46.31	2.30	1.29	0.91	4.50	1.22	0.82
Cultivator Hi Res 12-30	225	18,318	15.45	1,545	68.41	2.28	1.45	0.70	4.43	1.16	0.77
Rotary Hoe 15 ft	75	3,681	18.55	1,855	26.82	0.65	0.29	0.50	1.45	0.35	0.21
Rotary Hoe 21 ft	105	5,473	25.96	2,596	32.72	0.59	0.31	0.36	1.26	0.31	0.21
Rotary Hoe 30 ft	160	8,351	37.09	3,709	45.05	0.64	0.32	0.25	1.21	0.33	0.23
Potato Cultivator 4 row	75	4,112	5.36	778	25.75	2.25	0.80	1.75	4.80	1.29	0.74
Potato Cultivator 6 row	105	6,271	8.04	1,126	31.44	1.91	0.83	1.16	3.91	1.08	0.69
Sugar Beef Cult. 12 row	105	9,281	5.60	336	41.58	2.75	3.01	1.67	7.43	1.37	0.99
S-P Boom Sprayer 47 ft		49,464	25.92	2,592	89.21	0.00	2.89	0.55	3.44	0.92	0.00
S-P Boom Sprayer 60 ft		61,502	33.09	3,309	107.34	0.00	2.81	0.43	3.24	0.89	0.00
Sprayer 30 ft	40	4,009	15.36	1,229	28.78	0.45	0.49	0.94	1.87	0.31	0.14
Boom Sprayer 50 ft	60	5,088	25.61	2,561	32.17	0.37	0.32	0.56	1.26	0.26	0.12
Sprayer Hi Pres 50 ft	60	21,382	23.64	2,364	56.63	0.40	1.39	0.61	2.40	0.62	0.13
Anhydrous Appl. 30 ft	160	16,653	12.73	509	88.63	1.86	4.16	0.94	6.96	1.53	0.67
Fert. Sprd. 4 T./40 ft	60	8,636	23.76	713	56.15	0.40	1.46	0.50	2.36	0.37	0.13
Corn Stalk Chopper 12 ft	60	7,659	4.65	465	30.61	2.04	2.41	2.13	6.58	1.47	0.68
Potato Shredder 18 ft.	130	11,256	6.98	698	46.61	2.88	2.38	1.42	6.68	1.70	0.99
Rock Picker 6 ft	75	11,255	1.42	85	50.85	8.53	19.71	7.62	35.85	8.52	2.80

* See footnotes at end of tables

Table 5. Harvesting Equipment Economic Cost Structure for 1997

Machine	Tractor Size (HP)	Net Cost of the New Implement	– Estimated – Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1/]	Total Cost / Acre[2/] Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3/]	Diesel Fuel Gal/Ac
Mower-Conditioner 9 ft	40	11,484	4.36	349	34.79	1.58	4.13	2.27	7.97	1.13	0.49
Rotary Hay Mower 6 ft	40	5,643	2.91	291	25.52	2.36	3.32	3.09	8.77	2.15	0.73
Rotary Mow/Cond. 9 ft	75	14,318	4.36	349	43.91	2.77	5.13	2.17	10.06	1.80	0.91
Hay Rake (Hyd) 9 ft	40	3,735	3.49	698	19.10	1.97	0.92	2.58	5.47	1.13	0.61
Hay Swather-Cond 12 ft	60	35,387	5.82	465	85.14	1.63	11.45	1.55	14.63	3.76	0.55
Swather-Cond 16 ft self prop		51,353	7.76	621	108.58	0.00	12.84	1.16	14.00	3.68	0.40
Grain Swather 18 ft pull type	75	9,612	8.73	698	40.24	1.39	2.19	1.03	4.61	1.17	0.46
Grain Swather 21 ft pull type	75	14,169	10.18	815	48.86	1.19	2.73	0.88	4.80	1.22	0.39
Grain Swather 21 ft self prop		43,177	10.18	815	93.73	0.00	8.32	0.88	9.21	2.40	0.30
Hay Baler Pto Twine	40	12,500	3.78	756	32.81	1.82	3.48	3.38	8.68	2.48	0.56
Round Baler 1000 lb	60	14,549	3.01	603	41.14	3.15	7.18	3.31	13.65	6.07	1.06
Round Baler 1500 lb	60	17,856	4.64	927	46.05	2.05	5.73	2.15	9.93	4.63	0.69
Rd Baler/Wrap. 1000 lb	60	20,483	3.01	603	49.90	3.15	10.09	3.31	16.56	7.96	1.06
Rd Baler Wrapper Silage	60	16,335	2.48	372	42.32	3.83	9.60	3.63	17.05	6.76	1.28
Bale Wrapper Dry Hay	40	7,042	2.48	372	26.22	2.77	4.17	3.63	10.56	3.36	0.85
Forage Harvester 2 row	105	19,787	1.65	165	52.63	9.29	14.80	7.72	31.81	6.13	3.36
Forage SP Harvstr 2 row		132,323	2.04	305	124.36	0.00	54.80	6.27	61.07	6.25	2.41
Forage SP Harvstr 3 row		159,235	3.05	458	147.50	0.00	44.11	4.18	48.29	5.14	2.06
Large Forage Blower	60	4,919	1.00	50	29.61	9.50	11.11	9.00	29.61	5.08	3.18
Combine Grain Head 15'	Sm Comb	9,600	5.09	1,018	86.37	13.16	1.30	2.51	16.97	5.74	1.93
Combine Grain Head 20'	Md Comb	12,050	6.79	1,358	98.81	11.45	1.22	1.88	14.56	5.01	1.68
Combine Grain Head 30'	Lg Comb	16,750	10.18	2,036	112.87	8.70	1.13	1.25	11.09	3.89	1.35
Corn Combine 4-36		16,025	3.36	672	90.78	19.94	3.28	3.80	27.02	8.91	2.92
Corn Combine 4-30		17,579	2.80	560	91.80	23.92	4.30	4.56	32.79	10.76	3.50
Corn Combine 6-30		23,450	4.20	840	106.61	18.51	3.83	3.04	25.38	8.41	2.71
Corn Combine 8-30		28,140	5.09	1,018	109.85	15.27	3.80	2.51	21.58	7.04	2.24
Corn Combine 12-30		43,350	7.64	1,527	131.02	11.60	3.88	1.67	17.16	5.59	1.80

(Continued on next page)

Table 5. Harvesting Equipment Economic Cost Structure for 1997 (Continued)

Machine	Tractor Size (HP)	Net Cost of the New Implement	– Estimated – Work Performed Ac/hr	Ac/yr	Total Cost / Hour[1]	Total Cost / Acre[2] Equipment Tractor	+Machine	Labor +Charge	Total = Dollars	Operating Expense / Acre[3]	Diesel Fuel Gal/Ac
Potato Windrower 2 row	75	28,065	1.49	149	59.43	8.09	25.19	6.51	39.79	7.88	2.66
Potato Windrower 4 row	105	61,576	2.99	299	106.85	5.15	27.37	3.25	35.76	6.85	1.86
Potato Harvester Seed 2R	130	59,418	1.38	295	104.08	14.57	34.18	26.74	75.48	19.16	5.00
Potato Harvester Seed 4R	130	93,959	2.76	590	131.32	7.28	26.96	13.37	47.62	13.43	2.50
Potato Harvester 2 row	130	48,623	1.84	294	101.91	10.92	24.45	20.06	55.43	11.66	3.75
Disk Bean Top Cutter 6 Row	105	11,565	6.40	512	46.86	2.40	2.93	1.99	7.32	1.40	0.87
Sugar Beet Lifter 4 row	105	42,250	3.47	277	113.69	4.44	24.69	3.68	32.81	9.76	1.61
Sugar Beet Lifter 6 row	130	55,100	5.20	520	131.77	3.86	19.02	2.45	25.34	8.90	1.33
Sugar Beet Topper 6 row	75	16,756	5.33	427	52.22	2.27	5.37	2.16	9.79	1.97	0.75
Sugar Beet Topper 12 row	160	32,382	10.67	853	90.36	2.22	5.18	1.08	8.47	1.87	0.80
Sugar Beet Wagon 8 Ton	75	8,944	3.47	277	35.18	3.49	4.07	2.60	10.15	2.10	1.15
Sugar Beet Wagon 20 Ton	200	35,620	5.20	520	83.23	5.54	8.73	1.73	16.01	3.93	2.04
Sugar Beet Wagon 24 Ton	225	37,779	5.20	520	92.34	6.78	9.25	1.73	17.76	4.24	2.29
Manue Spreader 150 bu	75	5,324	3.49	349	31.51	3.46	2.93	2.63	9.03	2.67	1.14
Manure Spreader 300 bu	105	7,284	3.49	349	38.55	4.40	4.01	2.63	11.04	3.40	1.59
Manure Spreader 400 bu	130	11,558	4.65	465	51.39	4.31	4.75	1.97	11.04	3.58	1.48
Gravity Grain Box 185 bu	60	2,262	1.65	215	21.34	5.74	1.72	5.44	12.90	2.92	1.92
Gravity Grain box 240 bu	75	2,930	1.65	215	24.65	7.31	2.15	5.44	14.90	3.69	2.40
Baled Hay Wagon	40	2,723	3.78	945	27.06	1.82	0.58	4.76	7.16	0.99	0.56
Forage Wagon 14 ft	40	9,200	1.65	215	25.80	4.16	6.00	5.44	15.59	3.08	1.28
Forage Wagon 16 ft	40	10,279	1.65	215	26.77	4.16	6.59	5.44	16.18	3.23	1.28
1 Ton Hay Stacker	60	20,714	4.15	829	43.84	2.29	5.20	3.08	10.57	3.61	0.77
3 Ton Hay Stacker	75	30,686	4.84	1,064	56.56	2.50	6.56	2.64	11.69	4.64	0.82
6 Ton Hay Stacker	105	49,550	5.53	1,548	80.08	2.78	9.40	2.31	14.49	7.21	1.01

1) Total cost per hour is calculated as yearly depreciation, interest, insurance, housing and repairs, divided by hours used per year. Implement and power unit costs are summed. Fuel, lubricants, and labor are added to the total.
2) Total cost per acre is total cost per hour divided by acres per hour. Includes operating expenses, labor and overhead costs.
3) Operating expenses are included in total cost per acre and include fuel, lubricants, repairs and maintenance, but not labor. Labor is listed separately.